Lab 0 10/4/19

Due: These 4 materials (Plastic, Metal, Wood, Glass) & three of your own to be checked off by the end of my office hours next Thursday 10/10 1-2PM.

Plastic

1. Launch unreal engine
2. Create new blank blueprint project, include starter content
3. Delete all the things in the world editor
4. Content Browser/Starter content/blueprints/BP_lightStudio
   a. Add it to the scene
   b. In details panel check use hdri
   c. Uncheck use light sun and use atmosphere
5. Modes/Basic/Plane drag into scene
6. Set size in scale part of details panel if necessary
7. Set default material to be Pine
8. Go to content folder in content browser, right click and make new folder called materials (to teach organization practices we expect in the class)
9. In materials folder right click to create a new material (name it plastic)
10. Double click on the material to open the material editor
11. Right click to the left of the main material mode and search for constant… select constant3vector
12. Change the color of the new element
13. Connect the ConstantVec to the base color element on the main node
14. Drag a constant element from the palette and in the details panel on the left enter the value to be .2
15. Connect the constant to the roughness value on the main node
16. Save & apply the material. Close the material editor
17. Drag a cube from the modes panel into the scene & set its material in the details panel to the new plastic material we created

Metal

1. Create a another material called metal
2. Open the material editor for metal
3. Add a constant 3 vector and make its base color a light grey.
4. Add a constant, set its value to 1, connect it to the metallic node
5. Add another constant set its value to .2 and connect it to the roughness mode
6. Save & add another item to your scene that is metallic!

Wood

1. Create another material called wood
2. Right click next to the main node and search for TextureSample
3. In the details panel on the left select a T_Wood_Floor_Walnut_D material from the drop down menu next to the texture item.
4. Connect the rgb dot of the texture sample to the base color element.
5. Connect the red dot to the specular node
6. Duplicate the texture node twice so we can sample more textures
7. Make one of them sample T_Wood_Floor_Walnut_M and the other one sample T_Wood_Floor_Walnut_N.
8. Connect the "M" sample to the roughness dot
9. Connect the N sample to the normal dot
10. Save & Apply
11. In your world change the plane to have your new wood material instead of the pine.
    a. Notice how the specular node dimishes the light being reflected in the seems, and the normal map modifies the way the light hits the planks. Now it looks more geometric!

Glass

1. Create another material and name it glass
2. Open the material editor
3. In the details panel change the blend mode to be translucent instead of Opaque.
4. Now scroll down to the translucency section of the details panel
    a. Change lighting mode to surface translucency volume
5. Add a ConstantVector4
    a. Choose a new color
    b. Set the alpha value to 0.5
6. Connect the ConstantVec to the base color
7. Drag out from the constantvec to an empty space, release your mouse and search for the ComponentMask
8. Select the ComponentMask and look at the details panel, have the alpha channel be the only one checked
9. Connect the mask to the Opacity channel
10. Save & Apply
11. Check it out on a new object